What is claimed is:

1. A computer implemented universal broadcast method comprising the act of preparing a delivery matrix defining a data transmission sequence suitable for broadcast, to a plurality of clients, on-demand data in a non client specific manner, whereby transmission of said on-demand data files requires an amount of transmission bandwidth that is independent of the number of said plurality of clients.

2. A computer implemented method as recited in claim 1, wherein the act of generating a delivery matrix comprises the acts of:

preparing a first scheduling matrix suitable for transmission of a first data file, said first data file being represented by a first plurality of data blocks, said first scheduling matrix providing a first sequence for transmitting said first plurality data blocks sequentially within time slots in a manner such that any client receiving transmission of said first data file according to said first scheduling matrix may begin accessing said first data file within one time slot.

3. A computer implemented method as recited in claim 2 wherein said first scheduling matrix is a constant bandwidth scheduling matrix.

4. A computer implemented method as recited in claim 3 wherein a constant quantity of data from said first plurality of data blocks are scheduled for transmission during allocated bandwidth.

5. A computer implemented method as recited in claim 4 wherein control of transmission during allocated bandwidth is performed by a low level hardware device.

6. A computer implemented method as recited in claim 3 wherein said first scheduling matrix is a variable bandwidth scheduling matrix.

7. A computer implemented method for generating a constant bandwidth, decreased idle time scheduling matrix suitable for the delivery of on-demand data in a non client specific format, said method comprising the acts of:

generating a scheduling matrix suitable for transmission of a first data file, said first data file being represented by a first plurality of data blocks, said first scheduling matrix providing a first sequence for transmitting said first plurality data blocks sequentially within time slots in a manner such that any client receiving transmission of said first data file according to said first scheduling matrix may begin accessing said first data file within one time slot;

determining a desired constant transmission bandwidth, wherein said constant bandwidth is then used to stream said data blocks sequentially according to the order of said first scheduling matrix.

8. A computer implemented method for controlling a universal set-top-box (STB), said method comprising the acts of:

receiving digital data in a plurality of channels and an electronic

program guide (EPG) indicating the nature of data transmitted in each of said plurality of channels, wherein a first one of said plurality of channels includes a data-on-demand program providing on-demand data in a non client specific format, said EPG indicating that said data-on-demand program includes a first data file being represented by a first plurality of data blocks, said first plurality of data blocks being provided sequentially within time slots in a manner such that a user of said universal STB may at any time begin accessing said first data file within one time slot;

providing said EPG data to said user of said universal STB;

receiving a data processing instructions from said user of said universal STB requiring access of said first data file; and

implementing said instructions from said user of said universal STB.

9. A computer implemented method as recited in claim 8, wherein said act of implementing instructions from said user of said universal STB includes the sub-acts of:

tuning said STB to said first channel in order to select data requested by said user;

processing said first plurality of data blocks as received, said processing including at least one of the following:

decoding said received data blocks;

decompressing said received data blocks;

re-assembling said received data blocks as necessary; and

storing said received data blocks to a local memory present

within said STB;

and

providing said first data file to an output device selected by said user of said universal STB.

10. A computer implemented method as recited in claim 9 wherein said output device is a television.

11. A computer implemented method as recited in claim 9 wherein said output device is a display monitor.

12. A computer implemented method as recited in claim 9 wherein said output device is a video cassette recorder (VCR).

13. A computer implemented method as recited in claim 9 wherein said output device is a computer system.

14. A computer implemented method as recited in claim 8, wherein said first plurality of data blocks is provided in a constant bandwidth manner in that a constant number of data blocks are received during each time slot.

15. A computer implemented universal data broadcast method comprising the acts of:

at a universal data broadcast system, performing the acts of:

preparing a delivery matrix defining a data transmission sequence suitable for broadcast, to a plurality of clients, on-demand data in a non client specific manner, whereby transmission of said on-demand data files requires an amount of transmission bandwidth that is independent of the number of said plurality of clients

providing a first channel server suitable for the transmission of on-demand data via a first channel;

prior to data broadcast, preparing said first channel server for the transmission of data-on-demand information, said preparing said first channel server including the acts retrieving said delivery matrix into a memory of said first channel server and retrieving data blocks scheduled for delivery by said delivery matrix into said memory of said first channel server;

transmitting an electronic program guide (EPG) including information indicating that said first channel contains on-demand data; and

transmitting data from said first channel and said second channel;

and

at a universal STB, performing the acts of:

receiving digital data including data in said first channel, and said EPG;

providing said EPG data to a user of said universal STB;

receiving data processing instructions from said user of said universal STB; and

implementing said instructions from said user of said universal STB.

16. A computer implemented method as recited in claim 15, wherein the act of generating a deliver matrix comprises the acts of:

preparing a first scheduling matrix suitable for transmission of a first data file, said first data file being represented by a first plurality of data blocks, said first scheduling matrix providing a first sequence for transmitting said first plurality data blocks sequentially within time slots in a manner such that any client receiving transmission of said first data file according to said first scheduling matrix may begin accessing said first data file within one time slot.

17. A computer implemented method as recited in claim 16 wherein said first scheduling matrix is a constant bandwidth scheduling matrix.

18. A computer implemented method as recited in claim 17 wherein a constant number of said first plurality of data blocks are scheduled for transmission during each time slot.

19. A computer implemented method as recited in claim 15 wherein said first scheduling matrix is a variable bandwidth scheduling matrix.

20. A data delivery matrix comprising

a data file divided into a number of data blocks;

said number of data blocks being arranged into an order determined by the steps of:

a) dividing said data file into said number of data blocks;

b) setting a first variable to zero;

c) clearing a reference array;

d) comparing said first variable to the total number of said number of data blocks;

e) if said first variable is less than the total number of said number of data blocks, set a second variable to zero;

f) compare said second variable to the total number of said number of data blocks;

g) if said second variable is less than the total number of said number of data blocks writing one or more stored data blocks stored in a column of a scheduling matrix into said reference array, said column determined by the [(i + j) mod (x)] where i is said second variable, j is said first variable and x is said number of data blocks;

h) if said reference array already has at least one of said stored data blocks, do not write a second copy;

i) check if said reference array contains a block corresponding to said second variable;

j) if said reference array does not contain said data block corresponding to said second variable, said data block is added to said reference array and said scheduling matrix at a position in said matrix equal to [(i + j) mod(x), j] and said second variable is increased by 1;

k) if said reference array does contain said data block corresponding to said second variable, said second variable is increased by 1;

l) repeat steps g) through k) until said second variable is equal to said total number of data blocks;

m) increase said first variable by 1;

n) repeat steps c) through m) until said first variable is equal to said total number of data blocks; and

o) reconfigure said scheduling matrix into a stream;

wherein said order is transmitted in a repeating signal over a medium having a bandwidth assigned to said data file, and wherein said bandwidth is fully used by said repeating signal.

21. The data delivery matrix of claim 20, wherein said step of reconfiguring said scheduling matrix into a stream involves determining the size of said bandwidth assigned to said data file.

22. The data delivery matrix of claim 21, wherein determining the size of said bandwidth assigned to said file minimizes said bandwidth.

23. The data delivery matrix of claim 21, wherein determining the size of said bandwidth assigned to said file maximizes said bandwidth.

24. The data delivery system having a plurality of data delivery streams derived from a data delivery matrix as in claim 20, wherein said data file comprises a plurality of distinct data files.

25. A computer implemented method for transmission of an on-demand data file comprising:

an act of preparing a delivery matrix defining a repeating data transmission sequence suitable for broadcast over a medium to a plurality of clients in a non-specific manner;

wherein said act of preparing said delivery matrix further comprises reducing a data file into data blocks having at least a first block, and ordering said data blocks into a said repeating data transmission sequence;

wherein a user may receive said repeating data transmission sequence and begin using said data file in an uninterrupted manner as soon as said first block is received;

wherein said repeating data transmission sequence requires a pre-determined bandwidth and further wherein there is deminimus idle time in transmission of said repeating data transmission sequence; and

whereby transmission of said data on-demand file requires an amount of transmission bandwidth that is independent of the number of said plurality of clients.

26. The computer implemented method for transmission of an on-demand data file as in claim 25, wherein said repeating data transmission sequence converted into a new decreased idle time scheduling matrix.

27. The computer implemented method for transmission of an on-demand data file as in claim 25, wherein said data transmission sequence has a constant bandwidth.

28. The computer implemented method for transmission of an on-demand data file as in claim 27, wherein a constant number of said data blocks are scheduled for transmission during each time slot.

29. The computer implemented method for transmission of an on-demand data file as in claim 27 wherein said data transmission sequence has a variable bandwidth.

30. A computer implemented universal data broadcast method comprising the acts of:

preparing a delivery matrix defining a data transmission sequence suitable for broadcast, to a plurality of clients, on-demand data in a non client specific manner, whereby transmission of said on-demand data files requires an amount of transmission bandwidth that is independent of the number of said plurality of clients, and wherein the use of said amount of transmission bandwidth is fully optimized;

providing a first channel server suitable for the transmission of on-demand data via a first channel;

prior to data broadcast, preparing said first channel server for the transmission of data-on-demand information, said preparing said first channel server including the acts of retrieving said delivery matrix into a memory of said first channel server and retrieving data blocks scheduled for delivery by said delivery matrix into said memory of said first channel server;

transmitting an electronic program guide (EPG) including information indicating that said first channel contains on-demand data; and

transmitting data from said first channel and said second channel;

and, at a universal set-top box (STB), performing the acts of:

receiving digital data including data in said first channel, and said EPG;

providing said EPG data to a user of said universal STB;

receiving data processing instructions from said user of said universal STB; and

implementing said instructions from said user of said universal STB.

31. A computer implemented method as recited in claim 30, wherein the act of generating a deliver matrix comprises the acts of:

preparing a first scheduling matrix suitable for transmission of a first data file, said first data file being represented by a first plurality of data blocks, said first scheduling matrix providing a first sequence for transmitting said first plurality data blocks sequentially within time slots in a manner such that any client receiving transmission of said first data file according to said first scheduling matrix may begin accessing said first data file within one time slot.

32. A computer implemented method as recited in claim 31 wherein said first scheduling matrix is a constant bandwidth scheduling matrix.

33. A computer implemented method as recited in claim 32 wherein a constant number of said first plurality of data blocks are scheduled for transmission during each time slot.

34. A computer implemented method as recited in claim 30 wherein said first scheduling matrix is a variable bandwidth scheduling matrix.

35. A computer implemented method for generating a constant bandwidth, decreased idle time scheduling matrix suitable for the delivery of on-demand data in a non client specific format, said method comprising the acts of:

generating a scheduling matrix suitable for transmission of a first data file, said first data file being represented by a first plurality of data blocks, said first scheduling matrix providing a first sequence for transmitting said first plurality data blocks sequentially within time slots in a manner such that any client receiving transmission of said first data file according to said first scheduling matrix may begin accessing said first data file within one time slot;

determining a desired constant transmission bandwidth, wherein said constant bandwidth is defined by the transmission of a defined constant number of data blocks per time slot; and

for a next time slot, selecting sequentially a number of data blocks for transmission being equal to the defined constant number of data blocks, cycling back to the beginning of said first sequence of data blocks once the entire first sequence of data blocks has been scheduled for transmission, wherein use of said constant bandwidth is fully optimized.